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**Collaborators:** The PhD study is part of the project ‘Analysis of activity-based travel chains and sustainable mobility’ (ACTUM), hosted by the Technical University of Denmark (DTU Transport), in a strategic research alliance with the Department of Architecture, Design & Media Technology at Aalborg University and the Centre of Mobilities & Urban Studies.

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Project/chapter	Theory input	Method	Epistemology
Making Everyday Mobility	mobilities theory, nonrepresentational theory, sociological family theory	qualitative interview, GPS tracking, mobile field studies, grounded theory	pragmatism, philosophical hermeneutics

## Introduction

This chapter concerns the PhD study “Making Everyday Mobility – a qualitative study of family mobility in Copenhagen” (Wind 2014) defended in the fall 2014. The study takes point of departure in the everyday mobility of 11 families with children living in the Greater Copenhagen Area. It is empirically based on a series of qualitative family interviews and GPS tracking, complemented by field studies of everyday family mobility. The main focus of the study is to explore how everyday mobility is associated with the family’s processes of coping with busy everyday family life. The overall research question that is answered in the study is:

“How are selected families in the Greater Copenhagen Area coping with practical, social and emotional conditions in everyday life through the making and performance of mobility practices?”

Through the analysis of the families and their everyday mobility, the study elucidates the how the family members through their ordinary mobility performances, such as commuting to work, escorting children to the kindergarten, going on the weekly visit to the grandparents, driving children to after-school activities, are not only instrumentally moving family members around, efficiently and safely getting them from A to B, but also transforming travel time into small pockets of togetherness, experiences, care, play, relaxation, reading, work, planning and coordination. Furthermore, the thesis addresses the extensive labour, mobility skills and practical knowledge used by the family members in crafting and sustaining their usages of everyday family mobility.

Drawing from selected extracts from the dissertation, this chapter aims at reporting the PhD study’s philosophical foundation and its epistemological and methodological consequences. The table (figure 1) seeks to give an overview of the project’s main theoretical input, the methods used and the epistemological considerations.

Obviously, these three dimensions condition each other in various ways, some of which are discussed in this chapter. Due to the confines of this short description, this chapter will focus upon unfolding the philosophical positioning within theory of science and lay out the meta-theoretical foundation and its influence on the epistemological and methodological orientation of the study.

The chapter begins by positioning the study in relation to pragmatism and hermeneutics and presents the implications of these philosophical positions as tools for studying everyday family mobility. From this point, drawing on pragmatism in combination with hermeneutics, the chapter addresses the epistemological question of what knowledge is and how knowledge is produced. From this epistemological basis the chapter turns to considering methodology. With inspiration from Dewey’s pragmatic inquiry and Charles Sander Peirce’s concept of abduction, a methodology for the production of knowledge through the cyclical-iterative process of inquiry is outlined.

### *Pragmatism and studying everyday mobility*

This study takes its point of departure in a qualitative stance relying first and foremost on pragmatism, and is especially inspired by John Dewey’s *instrumental pragmatism* (Brinkmann 2006, Bacon 2012, Gimmler 2005), complemented by insights from Hans-Georg Gadamer’s *philosophical hermeneutics* (Højberg 2004, Kinsella 2006, Brinkmann 2012). Pragmatism has a special interest in everyday life. One of Dewey’s ambitions was to reconstruct philosophy in order to bring it closer to and make it more socially relevant to everyday life (Bacon 2012: 47). Dewey did not discriminate between the scientific endeavour of “developing knowledge of the world” and mundane everyday “acting in the world [which] were all part of the same process of learning and discovery through experience” (Healey 2009: 280). Hence, pragmatism is in no way estranged from the everyday and the social practices people engage in. This makes pragmatism, as Brinkmann (2012) states,

“particularly interesting for everyday life researchers because it blurs any hard-and-fast distinctions between scientific knowing and human knowing in general” (p. 38).

This study is concerned with the everyday mobile lives of families. The objective is to understand and produce knowledge of how families use mobility as a mode of coping in everyday life. Pragmatism provides an approach to the world and to knowing that can be used to engage with the families and their mobility from an “agent point of view” (Bacon 2012: 108), taking their situational practices in everyday life as the point of departure. Furthermore, pragmatism offers a pluralistic perspective on the world as it insists “on the validity of different ways of viewing and reporting the world as a function of our different contexts and purposes in dealing with it” (Barnes 2008: 1547). Neither everyday life nor mobility exists as a single and complete whole; depending on the situation, they are understood and performed in multiple ways. By focusing on *knowledge how*, pragmatism rejects the search for universal and everlasting laws in favour of recognising and emphasising the local and practical knowledge that emerges from practical situations. Hence pragmatism supports qualitative inquiry into everyday mobility practices as particular and contextual situations in which tacit knowledge is used in coping with uncertainty and contingency in everyday life.

Moreover, pragmatism offers an interesting instrumentalist approach to research practice. As Louis Menand writes, “ideas are not ‘out there’ waiting to be discovered, but are tools—like forks and knives and microchips—that people devise to cope with the world in which they find themselves” (quoted in Brinkmann and Tanggaard 2010: 243). This should be understood in the broadest possible sense: not only ideas/knowledge, but also theories, methods, models, concepts and analytical approaches are all thinking heuristics and sensitising tools supporting the inquiry at hand rather than transcendental Truths (Brinkmann 2012: 56). Similar to pragmatism, hermeneutic thought is interested in

interpretation and understanding as ways of knowing. Kinsella (2006) argues that due to their emphasis on understanding and interpretation, as opposed to explanation and verification, there is a profound linkage between qualitative inquiry and hermeneutic thought, although this often goes unnoticed. Historically, hermeneutics was used mainly as a methodology for finding what were regarded as the true meanings of ancient biblical texts (Kinsella 2006). However, in *philosophical*, also termed *ontological*, hermeneutics, hermeneutics is not a method for gaining true knowledge but rather a way of being in the world, in which human life is “conceived as an ongoing process of interpretation” (Brinkmann 2012: 40). Hans-Georg Gadamer, one of the main proponents of philosophical hermeneutics, argued that humans are interpreting beings. In everyday life, we are continually, often subconsciously, concerned with interpreting and thereby seeking to understand and make sense of the environments we traverse, the actions and statements of other people, the texts we read, the scenes and signs we see and so on. Both Dewey’s pragmatism and philosophical hermeneutics regard knowing and interpreting not merely as something researchers do, a scientific practice or methodological set of rules and procedures, but instead as a way of being, something all humans are engaged in when performing everyday life. Hence interpreting and understanding is not only a “methodological process or condition but also an essential feature of all knowledge and understanding, therefore every interpretation relies on other interpretations” (Kinsella 2006).

From this understanding, hermeneutic thought offers a conceptualisation of knowing in research as an iterative process of interpretation of a world that is already interpreted and imbued with meaning. This “double hermeneutic” highlights the process of knowing as a two-way relation, a reciprocal interaction between the subject and the object, in which both parties holds transformative efficacy (Højberg 2004: 320). Unlike pragmatism, philosophical hermeneutics does not provide any specific methodological schemes; rather it is concerned with the

conditions of understanding and knowing. Hence these insights from hermeneutic thought will be used in a pragmatic manner in the following sections, in combination with a pragmatist approach, as tools supporting reflection on the process of knowing and knowledge production.

### *Epistemological considerations*

Pragmatism argues for an anti-representational approach to understanding what knowledge is and how it can be obtained (Gimmler 2012). It rejects the representational ideal of obtaining propositional or corresponding knowledge that simply mirrors phenomena in the world. Despite this stance, pragmatist epistemology takes its point of departure in the empiricist idea that reality is and can be experienced through our senses. However, Dewey was critical of what he called the ‘spectators theory of knowledge’ of the British empiricists, who claimed that through phenomenal experience knowledge, as an accurate representation of the world, could be obtained (Bacon 2012: 50). He argued that perceiving phenomenal experience as a neutral and pure perception of reality is erroneous. Instead, human experience of the world, and hence knowing, always involves primary reflection “influenced and prefigured by theory, traditions and habits” (Gimmler 2005: 17). Thus, knowledge is never universal or fixed, but always local, contextual and contingent. Through the use of hermeneutics, the consequences of the active knower will be further investigated shortly.

In addition to being an anti-representationalist philosophical position, pragmatism is anti-foundational, as it holds that “knowledge has and requires no foundation” (Bacon 2012: viii) neither in a privileged metaphysical sphere nor in a transcending logic or structure in the world. As the quest for certainty and universal truths is abandoned and knowledge is understood as always being local and limited, and emerging in empirical situations of social practice, knowledge no longer requires

absolute justifications (Gimmler 2012: 47). Hence pragmatist knowledge never amounts to *Truth*, in the traditional sense of the word, as knowing can never be endowed with complete certainty. Instead knowledge is empirical, grounded *beliefs* that are “robust and stable enough to rely upon but always open to revision, not least because they have to adapt themselves to other changes in the environment” (Bacon 2012: 49). Hence pragmatism does not reject the claim that knowledge is based upon other knowledge and indeed should be. As knowledge remains beliefs they are never “permanent, Cartesian, foundations” but instead always provisional and revisable, as they may be proven wrong in other or later instances (Bacon 2012: 54).

Turning away from a representationalist ideal also shifts the focus of the scientific enterprise from uncovering and representing universal facts or truths in propositional *knowledge that*, to producing local and contingent knowledge claims of *knowledge how*. As this thesis subscribes to this stance, its aim is not to uncover universal laws or causal connections governing everyday mobility in the family; rather it is interested in knowing how families are coping with specific contingent situations and conditions in everyday life through making and performing mobility practices. In a pragmatist approach (and a hermeneutic approach, as we shall see shortly), the family’s everyday mobility cannot be isolated from the social and historical contexts within which it is embedded. Family members’ doings in everyday life are not observable, causal processes that can be easily traced; rather they are incited by reasons, motives and beliefs, and therefore are only recognisable as meaningful when situated (Brinkmann 2012: 20-1).

### Knowledge Emerges from Practice

In the rejection of representationalism, foundationalism and the Platonic lineage of epistemology, that clearly separates object and subject and promotes the theoretical “observation” of the object (Gimmler 2012: 48), pragmatism offers a radically different and non-contemplative epistemology in which “we are not spectators

looking at the world from outside but rather agents operating within it” (Bacon 2012: 108). Dewey holds that knowing is not a passive process of perception and representation, but rather knowledge emerges in “the engagement of the active subject with the world” (Gimmler 2005: 17). Thus to Dewey, “the act of knowing something is part of interacting” (Gimmler 2005: 18), and knowledge emerges from the human experience of the world in practices, not from theory. Thus in pragmatism, practice has primacy over theory. This also means that all knowledge is fragile, fallible, situated and bound “to social practices and cannot be maintained within a privileged sphere of absolute certainty” (Gimmler 2005:18). Hence Dewey favours an understanding of knowledge that is interactive with the world and locally and empirically grounded in cultural, historical and social practices.

Therefore knowledge should not be understood as “fixed and complete in itself, in isolation from an act of inquiry” (Neubert 2001: 2) ; rather the understanding of knowledge Dewey tries to develop is a practical one that transcends the dualities of subject and object, theory and practice, relativism and absolutism (Thayer-Bacon 2002: 97). Although knowledge emerges in practice, or the act of inquiry, thinking is still crucial, as “knowledge comes neither by thinking about something abstractly nor by acting uncritically, but rather by integrating thinking and doing, by getting the mind to reflect on the act” (Gordon 2009: 49). Knowing is a process that begins with the act of inquiry in a particular situation, but is tested and evaluated through reflection before being folded back into the world, trying to control the situation. Hence knowledge, as Richard Rorty (1991) writes, is not a “matter of getting reality right, but rather a matter of acquiring habits of actions for coping with reality” (p. 1).

#### Normativity, Validity and Conditions for Knowing

Both pragmatism and hermeneutics place the researcher in an active role, by which subjectivity is brought into the research situation. Indeed, when engaging in qualitative inquiry, we do

not do so with a “virginal mind, but always with ‘certain acquired habitual modes of understanding, with a certain store of previously evolved meanings’” (Brinkmann 2012: 39). Consequently, when experiencing and thinking in a situation, the researcher is already and unavoidably engaged in primary reflection, evaluating and judging the situation from a certain normative perspective against the background of individual norms, private experiences and an existing web of beliefs. In pragmatism normativity is a profound and integral part of qualitative inquiry and knowledge production. Through experience, normativity infiltrates the process of inquiry (Gimmler 2005: 19). Having departed from a spectator’s theory of knowledge, the ideal in the pragmatist research process is not to produce *objective* knowledge in the traditional sense of the word. In the act of inquiry the researcher is actively experiencing the world, interacting with it and transforming the situation that is being studied (Bacon 2012: 52).

Gadamer’s philosophical hermeneutics provides further tools for reflecting on the researcher’s active role in the creative process of interpretation and understanding that is essential to knowledge production. In line with a pragmatist approach to knowledge, the ambition of hermeneutics is “not objective explanation or neutral description”; rather the purpose of hermeneutics is “sympathetic engagement with the author of a text, utterance or action and the wider socio-cultural context within which these phenomena occur” (Gardiner 1999: 63). As already mentioned, knowing, engaging in interpretation and eventually understanding, is in hermeneutics regarded as always located in a specific historical and cultural context (Højberg 2004: 321). Hence the knower is never situated in a ‘god-like’ position, being able to see everything, but is always granted only a partial view, framed by what in hermeneutics is termed a *horizon*. This metaphor describes what the knower is able to understand as being within the horizon, and, conversely, what the knower is unable to understand as being beyond the horizon. The horizon is shaped by *pre-understandings* and *prejudices* and constitutes how we see and understand phenomena, how we



orient ourselves, act and respond to the world (Højberg 2004: 322-3). Pre-understandings are the web of beliefs and knowledge that precedes any knowing, whereas prejudices are the set of normative orientations and meanings that is brought into the process of understanding.

In this light, the researcher is never separate from the object of study, but rather is actively shaping and demarcating the object based upon a knowledge ambition and is intimately involved in the production of knowledge. Hence the object being studied is “considered through the historically and culturally situated lens of the researcher’s perception and experience” (Kinsella 2006). Thus the produced knowledge always depends on a web of prior experiences, the choice of theoretical approach, the academic field, personal meanings, knowledge, beliefs and so on. Therefore the researcher must, as Brinkman (2012) argues, “take her own biography (and prejudices) into account” (p. 43). During the course of this study I have come to form a family and had my first and second child. The subject of the study, everyday family mobility, is therefore something that plays a highly relevant and significant role in my personal life. Hence my pre-understandings and prejudices affect the inquiry process, as it is experienced and interpreted through the historical and social context of my biography, tacit knowledge, values and normative beliefs. Therefore, to some degree, my experience and interpretation of the 11 families in the study and their everyday lives and mobility is unavoidably set against the backdrop of my personal life. The fact that I was raised in a middle-class nuclear family, on the outskirts of one of the larger provincial cities in Denmark, has certain implications for the horizon from which I perceive and interpret the families’ everyday urban mobility situated in the Greater Copenhagen Area. Some of the families’ mobility choices, tactics and coping strategies are familiar to me, as I have personal experience with them from my own life, while others struck me, when I first encountered them, as strange and alien. As Hastrup (1999: 130) argues, normativity and value are basic conditions of research and knowledge production

that cannot and should not be avoided. However, through purposive reflection, “each has the ability (however imperfect) to acknowledge and compensate for the influence our perspective may exercise on our analysis” (Hildebrand 2008: 225). Disclosing pre-understandings and prejudices does not eliminate one’s standpoint; rather transparency qualifies the knowledge being produced.

Returning briefly to Gadamer’s concept of horizon: our horizon is what enables us to make sense of experiences and encounters in everyday life. It is a frame that encapsulates the knower’s personal and unique way of understanding and engaging with the world, which is shaped by personal experiences, the communities in which the knower is invested and the historical and cultural contexts in which the knower lives (Højberg 2004: 234). Hence to understand how and why families make and perform mobility practices the way they do and the meanings they ascribe to their mobility, it is necessary to consider a fuller picture of their lives by addressing the historical, social and emotional contexts of their mobility, or what is in phenomenology termed the *lifeworld*.

Moreover, as we are constantly subjected to experiences and encounters in both everyday life and in research that may confound our understanding and prejudices, the horizon never coagulates. Instead the horizon is, as Gadamer (1996) writes, “continually in the process of being formed because we are continually having to test all our prejudices” (quoted in Kinsella 2006). This formation of the knower’s horizon is termed *fusion of horizons*. This process is the outcome of the on-flow of interpretations of objects, be they texts, practices, statements, people, places and so on, that happen more or less reflexively in everyday life as well as in the research process. The object of study, as Kinsella (2006) writes, “merges with the interpreter’s own questions in the dialectical play, which constitutes the fusion of horizons”. It is in this reciprocal process of interpretation that meaning and understanding emerge. The knowledge produced in the fusion of horizons is forged in the

relational encounter of the subject and object, and is therefore not one-way (i.e. only affected by the subject's pre-understandings and prejudices); rather the encountered object also holds transformative efficacy. Consequently, in such a dialogue the researcher's prejudices are "brought into play by being put into risk" (Højberg 2004: 325). This means that when confronted with empirical material on everyday family mobility, for purposes of both production and analysis, the researcher's own pre-understandings and prejudices are tested and changed, which enables the researcher's horizon to move and expand. Indeed, what separates the knower in everyday life from the knower in performing research is conscious and purposive attempts to become aware of his or her own prejudices in order to challenge them by exposing them to the object of study. In hermeneutic thought, this enables the process of developing new understanding. However, a break or rupture of understanding is also what in pragmatism amounts to the surprise fact, the puzzling and indeterminate situation of doubt that arrests action and provokes inquiry and knowledge production (Brinkmann 2012: 44).

Qualitative inquiry is an active process of interaction in which understanding and knowledge are created in the relations between researcher, respondents and the world. In this sense, pragmatist and hermeneutic inquiry do create "objective" knowledge, but not in the sense of the subject/object dichotomy. Rather they create the type of knowledge in which the object of study, paraphrasing Latour (2000), is allowed to *object* thereby emphasising that knowledge is co-constructed in interaction as a collective enterprise. Knowledge is inter-subjective and inter-objective; it is created in dialogue with others and the physical and material world, and as a consequence the object of study, others and the world always have the opportunity to influence and infiltrate the process of knowledge production by raising objections or fighting back. Hence, as Brinkmann (2012) states, "Objectivity is attained when objects reveal themselves through acts that frustrate the researcher's preconceived ideas" (p. 48).

The respondents are therefore not merely spectators, standing outside and looking in at family mobility, its motivations, purposes, effects, experiences and meanings, but they are very much situated within the process of interpretation and understanding (Højberg 2004: 339). Hence their interpretations, based upon their horizons of prejudices, normative values and pre-understandings of family life and mobility, are part of the inquiry and knowledge production in this study. The respondents do not share a uniform and coherent view of mobility in everyday life; rather they represent a multitude of understandings of and meanings ascribed to everyday mobility. The family members' understandings of and meanings found in everyday family mobility potentially frustrate, amaze and challenge the researcher's pre-understandings and prejudices. Hence a basic condition in both hermeneutics and pragmatism is that there is no universal reading of everyday family mobility or of how mobility practices are experienced, used, formed and performed in everyday life; instead the process of understanding and knowing is characterised by ambiguity, as it is always performed from a uniquely situated position contingent upon both the researcher's and the subject's constantly changing horizons (Kinsella 2006).

Yet this profound openness and ambiguity in the process of knowing does not entail extreme relativism. Although they are sometimes accused of this (see Højberg 2004: 332-3), proponents of philosophical hermeneutics, particularly Gadamer, claim that understanding, though contingent upon the horizon, is characterised by an openness to the world proven by our willingness and ability to change and expand our horizons through dialogue. To Gadamer, language, as a tool used in dialogue, is only functional when "we are with others in a common and commonly known objective world" (Ramberg and Gjesdal 2005). Hastrup (2011) argues, using the work of the pragmatist scholar Donald Davidson, that when engaged in dialogue, the world is always interwoven as a 'third point' of view that both grants common ground and shared understanding and retains the dialogue in a relational hold with the world, one that cannot easily be deviated from. Davidson claims

knowledge is not based solely on the subjectivity of those engaged in dialogue, but draws upon what he terms “triangulation”, a “three-way relation between speaker, interpreter and their shared environment” (Bacon 2012: 87). Hence, in producing knowledge through dialogue, when, for instance, interviewing respondents or reading a text, the presence of the world as the factual and objective reality that we have in common ensures the pitfall of extreme relativism is avoided, as the world cannot be departed from without voiding and violating the process of interpretation and, in turn, understanding.

In this study inquiry is initiated, problematised, analysed and tested in dialogue with the empirical reality, between the researcher and the family member respondents, and even in solitary moments when the act of inquiry is indirectly in dialogue with other theoretical sources, the academic field of research and the researcher’s personal experience and relationship with everyday life and mobility. Hence the knowledge produced in the study can be seen as valid, not by exact correspondence to the world, but exactly because of its close and dialogical relationship and commitment to the empirical world of the study. The pragmatist and hermeneutic approach in this study should therefore not be considered leading to knowledge claims of extreme relativism. Rather, subjectivity is a profound condition that cannot be put aside even in research practice - subjectivity is *the only way in*, so to speak. It is a tool through which knowledge is achieved, though it is always in relation to and affected by the existing web of understandings of and beliefs about the world (Hastrup 2011).

How is knowledge or belief reliably secured then? It is not enough for the researcher to personally feel convinced. On the contrary, Dewey thought knowledge should be tested and confirmed by others: “the method of science locates normative authority within communities of inquiry” (Bacon 2012: 55). In this study this goal has been pursued by building “member checking” (Saldaña 2009: 28) into the research design, in which initial findings from the

analysis can be fed back to the respondents and thereby tested and further developed. Just as the knowledge claims in this study have been produced in concert with family members, the theoretical concepts have been developed and refined through interaction with the academic community, literature, theories and other researchers. This refinement process cannot be completed without commitment and responsibility to the world. The empirical reality enters the inter-subjective process of inquiry as Hastrup’s (2011, p. 14) ‘third point’ between the researcher and others that cannot be avoided or disregarded without compromising the validity of the knowledge production.

### *Methodological considerations*

Having presented the epistemological approach to knowing and understanding based on Dewey’s pragmatism and Gadamer’s hermeneutics, the chapter will now address the study’s methodological considerations for performing qualitative inquiry. These primarily draw on Dewey’s active and practical engagement of inquiry, which can be understood as a “general abductive attitude” (Strübing 2007: 566). The process of inquiry can be separated into several stages, as illustrated in figure 1 below. To gain a sense of this methodological approach, each step will be briefly elaborated and related to this study.

In pragmatism, the production of knowledge always starts with an *indeterminate* situation (step a), a situation in which something is fishy or puzzling and does not fit, or simply arrests, the researcher’s general understanding (Gimmler 2012: 20, Brinkmann 2012: 39). This critical moment is equivalent to when the knower’s prejudices are challenged in the process of interpretation. To remove doubt and thereby overcome the *problem*, inquiry is undertaken. Inquiry is understood as a profound and integral part of both social and research practices, and is “prompted when we confront a situation in which there is some issue or problem that must be resolved” (Bacon 2012: 53). Hence the fusion of horizons is the

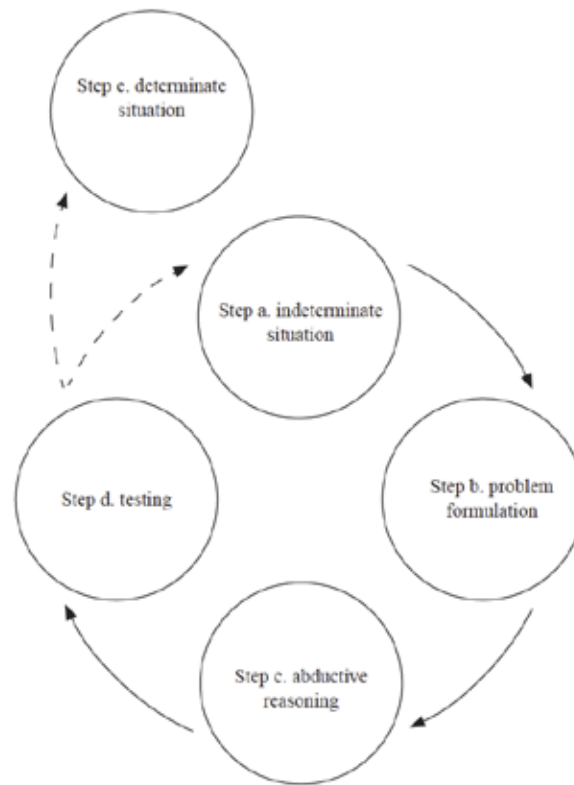


Figure 1: Pragmatist process of inquiry (problem-solving), adopted from Strübing (2007:563)

potential outcome of inquiry. An indeterminate situation arises when the researcher enters a new field of empirical research and is confounded by the empirical reality at first (Strübing 2007: 564). In this thesis, being confronted with and having to make sense of the multitude of ways families lead their everyday lives and the complexity and meanings they ascribe to making and performing mobility practices amounts to an indeterminate situation. As Strübing (2007) explains it, the “researcher’s ‘arrest of action’ lies in not having an answer to a certain empirical research problem. Doubt results from not properly understanding the empirical phenomena dealt” (p. 568).

However, the first step in the process of inquiry is the formulation of a *problem* or a question to guide or determine the scope of the inquiry (step b). What arrests action is not always clear, and “[i]n order to evoke inquiry, the situation needs to be designated as a specific situation of uncertainty ‘about’ something” (Strübing 2007: 563). Only when the situation has a clearly defined problem can the inquiry proceed to propose a solution (Brinkmann 2006: 71). Drawing on hermeneutics, we might say this means becoming aware of and clarifying which prejudices are violated. However, as Gimmler (2005: 21) points out, defining the problem can often be challenging. Defining the problem is an open and on-going process in the inquiry. As Bacon writes, “as we strive to secure our ends, we find that we revise our view of what we want” (Bacon 2012: 53). For instance, theories and methods brought into the study are sensitising tools that foreground certain aspects of the data, shaping both the inquiry and the knowledge that is produced. In pragmatism “there is no such thing as the ultimate formulation of the problem – the definition of the problem ought to be functionally fit in relation to its possible solution” (Gimmler 2005: 21). What the problem is and how we will try to solve it depends on our perspective, exactly as hermeneutic thought advocates for. Clarifying and defining the uncertainty of the situation is achieved through the scope of research and the formulation of research questions. In the study, primary attention is given to the uncertainty

of how the families are coping with everyday life through the use of mobility. However, as Brinkmann (2012: 180) also points out, in many research projects the problem, or at least the scope of the research, is given.

#### The Abductive Attitude

Through the process of inquiry, “We try to transform an indeterminate situation into one which is determinate by examining possible solutions, tentatively adopting a hypothesis which we then investigate to see whether it answers our needs” (Bacon 2012: 53). In pragmatism, this suggestion of understanding or hypothesis generation comes about through *abductive reasoning* (step c). This type of inference differs from the traditional models of reasoning of *induction* and *deduction* (Brinkmann 2012: 45). Whereas inductive reasoning is the process of formulating a *probable* statement from a limited number of observations, and *deductive* reasoning is the process of reaching a logical and *certain* conclusion from the premise of a general statement, abductive reasoning seeks to infer a *possible* statement based on an observation. Peirce formulated abductive reasoning as:

The surprising fact, C, is observed; But if A were true,  
C would be a matter of course; hence, there is reason to  
suspect that A is true.  
(Peirce in Gimmler 2005: 10)

When confronted with a problem, neither induction nor deduction inference is helpful, as neither can produce new ideas to overcome the indeterminate situation (Strübing 2007: 565). In abductive reasoning, however, the intent is to provide a workable explanation that can stabilise the situation (Brinkmann 2012: 46). Based on the context of the indeterminate situation, a provisional hypothesis is *suggested* to bring understanding or explanation of a given phenomenon. This “creative moment” of suggesting ideas in the abductive process can be described, as Peirce himself has admitted, as a kind of “guesswork” (Gimmler 2005: 11). However,

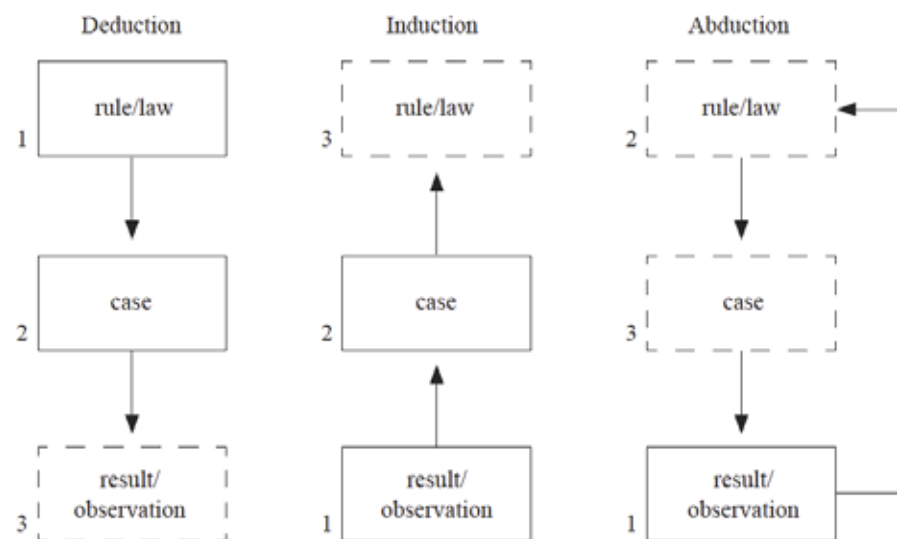


Figure 2: Forms of inference. Solid boxes contain premises that are presupposed as true; dashed boxes contain premises that are inferred.



in pragmatic inquiry, the abductive process of “correlating the observed facts of the situation with suggestions” (Strübing 2007: 565) is not unsupported but relies on a web of knowledge, theories, methods, models etc. that are instrumentally applied as tools and heuristics, aiding in the formulation of hypothesis and knowledge claims that can transform the situation into a determinate one.

In this study, through the process of inquiring into family mobility in everyday life, a series of theories and methods are utilised as tools aiding the production of knowledge presented in this thesis. For instance, the study pragmatically proposes the heuristic of *elasticity* as an instrumental way of understanding the role and importance of mobility in everyday family life (and as a model of how families cope with everyday life through their mobility). In this model of elasticity, the family’s mobility is approached both as if it were an *assemblage* and as if it were a *performance*. Hence these analytical approaches are interpretive tools that facilitate the creative moment in the abductive process of generating interpretations and producing knowledge.

Having formulated an *ad hoc* hypothesis, the next step in the inquiry process is to experiment and test its validity against the empirical material (step d). In Peirce’s abductive method, this is where deduction and induction inference are applied. Frederik Stjernfelt describes this step in the process as moving from the empirical world from which the hypothesis is formulated to an ideal world where it is possible to “trace certain ideal consequences of the model so proposed” (2007: 333) by applying deduction. Finally, using induction, the process returns to the empirical world to determine whether these consequences can be collaborated in the empirical material. If so, this is taken as an indication of the possibility that the hypothesis is working (Stjernfelt 2007: 337). In this iterative, cyclical process, commuting between the data, analysis and hypothesis building, the soundness and substance of the hypothesis grows (Strübing 2007: 566). Thus, relating this to the process of interpretation, abduction is a possible description

for what is at work methodologically in the event of fusion of horizons. When engaged in interpretation, the knower, based upon his or her horizon, constantly suggests, tests and approves hypotheses of the perceived phenomenon, allowing the knower’s horizon to move. Alternately, a hypothesis may fail testing and be rejected, in which case a new hypothesis is formulated (Stjernfelt 2007: 333). When the hypothesis succeeds in solving or engendering a satisfying understanding of the problem, the hypothesis successfully transforms the situation into a determinate one (step e). In the words of Dewey, “If inquiry begins in doubt, it terminates in the institution of conditions which remove the need for doubt. The latter state of affairs may be designated by the words of belief and knowledge ... I prefer the words ‘warranted assertibility’” (Bacon 2012: 53). Hence, based on “fallible yet self-corrective operations taking into account past failures and successes” (Healey 2009: 280), inquiry is the method involved in producing knowledge claims in pragmatism—not universal laws, but local and provisional knowledge functionally fit to the situation at hand.

### *Conclusion & perspectives*

In this chapter the philosophical positioning within the theory of science in the project “Making Everyday Mobility” has been presented. In doing so, the chapter has focused on some of the key epistemological and methodological implications of utilising a pragmatist and hermeneutic perspective. Firstly, Dewey’s pragmatism offers a useful way of thinking about the research process as instrumental, in the sense that theories and methods are to be understood as tools measured by their utility in aiding the production of knowledge. Thus the philosophical underpinning presented in this chapter is in itself to be understood as no more than an instrument with the purpose of facilitating the study at hand.

Secondly, both pragmatism and hermeneutics regard knowing and

understanding as a profound process in everyday life as well as in performing research. In this worldview, knowledge is not lying somewhere to be stumbled upon; rather knowledge is produced in the researcher's active (and transformative) engagement with world. Therefore, knowledge is not static, corresponding to some piece of the world, but dynamic, provisional and situational relative to the researcher's horizon, the subject of study and the material, historical and social environment in which they are emplaced.

Hence, thirdly, this qualitative stance elucidates the active role of the researcher as an unavoidable fact, and allows for consideration of his or her influence in the production of knowledge. Thus a pragmatist-hermeneutic positioning offers sensitivity to the contextual conditions of both the researcher and the object of study, especially through the notion of pre-understanding and prejudices. Through inquiry into everyday family mobility, we discover a world already interpreted by family members and filled with meanings based upon their historically and socially constituted horizons; this has implications for the choice and design of methods in the study.

Fourthly, this philosophical underpinning offers a way of embracing the ambiguity and complexity that confront the analysis of everyday family mobility. Pragmatism and hermeneutics are particularly directed towards the creativity and multiplicity of everyday life: the unfamiliar, that which disrupts understanding and arrests knowing. Linking back to the second point, both pragmatism and hermeneutics resist any idea of a universal reading or singular knowledge, and instead facilitate inquiry into plurality in the families' particular *lifeworlds*. However, they do so without falling into extreme relativism, as the inquiry is at all times empirically grounded.

Fifthly, through the abductive scheme of inquiry, pragmatism offers a methodological approach that combines the above-mentioned points and supports understanding, knowing and

production of knowledge as results of the creative potential in research practice (as well as everyday life practice). This abductive approach influences the qualitative inquiry performed in the study and, in particular, shapes how the empirical material is constructed and analysed. In this study this has, through experimentation, lead to a method combination of qualitative interviewing, GPS tracking, mobile field studies and grounded theory.

Finally, the knowledge produced in this PhD was initially envisioned to be integrated with the work of DTU transport researchers in the project ACTUM. The goal was to create a novel transport model for the metropolitan area of Denmark, and the qualitative knowledge on everyday mobility emerging from this PhD study was supposed to provide qualitative input and point to 'soft' factors within transport choice modelling. For various reasons, this integration did not occur. However, the knowledge has been applied in my work with urban design and in particular with mobilities design (Jensen & Lanng forthcoming). Here this knowledge, albeit not directly connected to design, serves as a strong foundation for understanding how people use, value and give meaning to mobility spaces in everyday life. This, in turn, has proven to become valuable background knowledge for urban designers operating in and designing mobility spaces.

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